From:	Coltrain, Katrina
To:	Kady, Thomas
Cc:	Downham, Todd
Subject:	Wilcox Geophysical Work and follow-up direct sensing
Date:	Friday, June 05, 2015 9:25:00 AM
Attachments:	Site Areas--Process and tank farms.pdf Wilcox Racer Geophysics Cost estimate 6-5-15.pdf

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Tom, please see some notes below. I got word yesterday afternoon that we did get funding for Wilcox. We can proceed with the geophysics and direct sensing work. I will need to work with you and our contract folk on getting the funding to you.

As noted below, I have some questions on the cost estimates. What is the process you use to put together your SOW and issue a work plan? Will we need to plan conference calls/meetings to discuss? Do you have the opportunity to negotiate costs received from the contractors?

Do you think that we will need a site walk with the contractors/geophysics folks to determine where we need/want the clearing and subsequent geophysical work? I think we have a pretty good handle on the process area (blue) and the tank farm (red), but we did not venture onto the northern extent of the site located across Refinery Road (yellow) See figure attached.

Cost estimate notes and comments.

Geophysical survey – 2-3 week effort
Seen as an essential first step to determine:
Preferential flow pathways
Feasibility of direct sensing technologies
Costs: ~125k (2 weeks), ~160k (3 weeks)

What is the estimated acreage for this work? The site is 125 acres, and it is impractical to cover the entire site. As you can see from the quick estimate I did, the Geophysics comes in at about $315K. I estimated that these activities would be completed over an approximate 60 acres.

Clearing/grubbing costs not included –
Assume the tank farm will be mowed/harvested by others
Recommendations on subs for clearing refinery area? 40-hr training?

I estimated this to be about 10 acres to include approximately 100 trees of various size up to 12” diameter. This also includes a grubbing depth of 6”, which I do not believe we need. The estimate provided is about $50K. This is in line with what you had estimated when we talked.

Schedule:
Geophysical survey weeks of July 20 and July 27 (potential continuation in to week of Aug 3
Data crunching/interpretation ~ 4wks; therefore, direct sensing work likely pushed to October
Direct sensing (Oct – mid Nov)

Data visualization – one day lag during field work; 3-4 weeks of refining after demobilization (December)

Direct sensing costs (general estimates – need geophysical work to determine specific scope):
~50k/week for LIF
Likely need 6 weeks for site this size ($300k)

At one of regional sites, the use of the geoprobe coupled with the LIT was estimated at about $30K per week.
Geoprobe work on EVR-wood – 32 days - $42,759 - ~$1300/day - ~$7000/week – this is just Geoprobe costs so you would have to factor in the rest of your work
Assume LIF would be similar to TarGost – TarGost - $5000 mob fee, ~$5000/day for TarGost activities – so about $30K for one week – this is on top of your Geoprobe costs – normally longer field events (i.e., several weeks) get better rates – this does not include your oversight costs

Add'l costs for assays, well points, soil cores, field testing -- ~50k (3 weeks @15k/week – GeoProbe with assay kits and field instruments. Some lab work

I estimated lab costs to include 5 soil, 5 subsurface and 5 groundwater. Analyses estimated include metals, organics, and waste characterization. There is some time for a geoprobe, but I do not expect that to be accurate as the program estimates a timeframe based on the number of samples. The lab costs come in at about $53K.

Data visualization ~50k
I have no comments or suggestions related to the visualization.

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